MEMORANDUM FOR: THE RECORD

FROM: for D. Robert Lohn, Regional Administrator

SUBJECT: Endangered Species Act (ESA) Section 7 Consultation/Magnuson-Stevens Act Essential Fish Habitat Consultation: Federal Agencies Funding/Conducting Scientific Research Activities Under the July 2000 Tribal Plan Limit

Species/ESU: Hood Canal summer-run chum salmon

Action Agencies: Bureau of Indian Affairs, National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Agriculture

Consultation Conducted By: NOAA Fisheries, Northwest Region

Date Issued: 07/31/02

Section 7 Consultation - Biological Opinion Consultation Number F/NWR/2001/01432

Background and Description of the Proposed Action and Action Area

NOAA Fisheries published an ESA section 4(d) rule adopting regulations necessary and advisable to conserve threatened species (July 10, 2000, 65 FR 42422). In a separate rule published July 10, 2000 (65 FR 42481), NOAA Fisheries provides a 4(d) limit for tribal resource management plans (Tribal Plan Limit).

The Puget Sound Indian Tribes and the Northwest Indian Fisheries Commission (NWIFC), in cooperation with the Bureau of Indian Affairs, submitted a Summer Chum Research Plan (Tribal Plan) that describes Tribal research and assessment activities in the Hood Canal region for review under the Tribal Plan Limit. The Tribal Plan contains a total of ten projects that could potentially affect the Hood Canal summer-run chum salmon Evolutionarily Significant Unit (ESU) listed as threatened under the ESA. Threatened Puget Sound chinook salmon that occupy areas in the Hood Canal region may be encountered during Tribal Research projects and are addressed in a separate Tribal Chinook Research Plan (BIA, 2001). All the projects are proposed to be undertaken by a Tribe, Tribal member, Tribal permittee, Tribal employee, or Tribal agent.

NOAA Fisheries' review of this Tribal Plan is set out in the July 31, 2002, document entitled "Evaluation and Recommended Determination of a Tribal Resource Management Plan for the Hood Canal Summer-run Chum Salmon, submitted for consideration under the Endangered Species Act's Tribal Plan Limit [50 CFR 223.209] for the Period January 1, 2002 -

December 31, 2006" (ERD).

The NWIFC requested that the Tribal Plan be valid for five years. Each year the NWIFC will report research related take for the past year and forecast activities and the take anticipated for the next year. Conduct of subsequent years' research activities will be contingent upon NOAA Fisheries' review of the annual report.

Some of the projects identified in the Tribal Plan will be funded, approved, or conducted by Federal agencies listed above (Federal Action). Therefore these Federal agencies must comply with section 7 of the ESA because their actions may affect the threatened Hood Canal summer-run chum salmon. The research activities include: (1) observational activities and activities that may harass ESA-listed fish such as snorkeling to observe fish presence and count fish, spawning and habitat surveys conducted both from the stream bank and in the water, and observing fish as they move through fish traps; (2) capturing fish with traps and nets; (3) anesthetizing fish to minimize stress due to handling; and (4) handling to count, measure, and mark fish, obtain biological samples, and to check fish for marks and tags. Such activities will involve harassing, capturing, handling, marking, or holding fish. The Tribal Plan contains details of the activities, proposed methodologies, and impacts. NOAA Fisheries' review of the Tribal Plan in the ERD provides further analysis of the research activities.

The action area is generally where the fish are found, primarily river reaches in the Hood Canal region of Washington state accessible to chum salmon. The specific areas for each research project are detailed in the Tribal Plan and summarized in the ERD.

Affected ESU's Current Status and Environmental Baseline

The ERD contains currently available information about the status of the Hood Canal summer-run chum salmon ESU and is accompanied by a summary of estimated annual take of this species. NOAA Fisheries recently reviewed the status and baseline of this species in the ESA Section 7 Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on Puget Sound chinook salmon and Hood Canal summer-run chum salmon (F/NWR/2000/01443) (NMFS, 2002). The conclusion of that biological opinion was that the research is not likely to jeopardize the continued existence of the Hood Canal summer-run chum salmon ESU; a total of 11 juvenile Hood Canal summer-run chum salmon are authorized to be handled and 3 may be indirectly killed annually as a result of the research.

It is possible to make only rough estimates of the number of adult and juveniles in this ESU during the coming five years. However, population abundance in this ESU is considered to be substantially less than historical levels. The paucity of accurate and comprehensive abundance data underscores the critical need for the Tribes' research plan and is discussed in the ERD.

The biological requirements for the Hood Canal summer-run chum salmon ESU is currently not being met under the environmental baseline. Their status is such that there must be significant improvements in the environmental conditions of the ESU's baseline. Previous NOAA Fisheries listing decisions (64 FR 14508) and consultations provide detailed discussions of environmental baselines. Current scientific information suggests that a multitude of factors, past and present, human and natural, have contributed to the decline of this ESU. For example there is evidence to suggest that previous and current destruction and modification of freshwater habitats contribute to the decline of salmon populations. Many of the research activities in the

Tribal Plan will examine the factors believed to aggravate the ESA-listed species' decline, as well as provide data reflecting the impact of recovery and management efforts.

Effects of the Proposed Action

In its biological opinions, NOAA Fisheries analyzes the effects of the action as defined in 50 CFR 402.02. NOAA Fisheries considers the estimated level of injury or mortality attributable to the collective effects of the action and any cumulative effects. The vast majority of the research projects in the Tribal Plan focus on monitoring and evaluating management actions that are recommended for the conservation of the Hood Canal summer-run chum salmon ESU. Research has not been identified as a factor for decline for the ESU and is generally considered an essential part of salmon and steelhead recovery efforts (NRC, 1996). For the Tribal Plan, the Northwest Indian Tribes developed projects which will benefit the conservation and recovery of the species. The projects will provide information that will enhance various entities' ability to make more effective and responsible decisions to aid ESA-listed fish. The resulting data will enhance knowledge about species life history, specific biological requirements, genetic make-up, migration timing, responses to anthropogenic impacts, and survival in the Hood Canal region.

None of the proposed research involves observation and fish handling that is intended to kill ESA-listed fish. However, observation and handling have the potential to cause stress, disease, injury or other sub-lethal effects. Those effects are fully discussed in the ERD and the ESA Section 7 Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on Puget Sound chinook salmon and Hood Canal summer-run chum salmon (NMFS, 2002) along with a discussion on measures to reduce adverse effects. Tribal researchers will use the same techniques and follow comparable terms and conditions as discussed in the above consultation, therefore, the effects will be comparable. In addition, these techniques are generally accepted in the scientific research profession (e.g., use of anesthetics), when handling fish and when conducting more intrusive activities such as fin-clipping. Based on extensive prior experience with the techniques the Tribal researchers will use and their stated minimization and mitigation measures, the unintentional mortality of ESA-listed fish is likely to be very low. A complete analysis of the research activities' impacts is included in the ERD.

It is not possible to make accurate estimates of the numbers of adult and juvenile Hood Canal summer-run chum salmon during the coming five years. However, NOAA Fisheries will work with the Tribes and WDFW to generate and evaluate research-related take in light of such estimates via annual reporting requirements associated with determinations under the Tribal Plan Limit as well as the salmon and steelhead 4(d) rule. Using an average of the most recent five years' estimates provided by the NWIFC, it is likely that chum salmon returns will number in the thousands of adult fish. None of the Tribes' research is intended to handle adult fish, although some may be harassed during habitat surveys. The effect therefore on adults is expected to be minor.

While we currently lack data on naturally produced juvenile chum salmon production for this ESU, it is possible to make rough estimates of juvenile abundance from adult return data. The five-year average approximated 8,800 spawner escapements for this ESU with estimated numbers varying from 3,407 fish in 1996 to 19,683 fish in 2000 for total escapements in the Hood Canal and the Strait of Juan de Fuca (NWIFC, 2001c). Although the average approximated 8,800 spawners, the conservative 1996 escapement estimate is used to determine the smolt emigration for this ESU. A rough estimate of summer chum smolt escapement is 880

smolts per female (from Big Beef Creek) (NWIFC, 2001). This yields an average smolt production figure of 1,499,000 in Hood Canal and the Strait of Juan de Fuca if the estimated female escapement is 1,703 (half of 3,407). Juvenile chum salmon outmigrate to seawater almost immediately after emergence from the gravel thus all juvenile fish to be encountered during the tribal research will be in this life stage. Hence, the Tribes' estimate of annually sampling 77,000 juvenile chum salmon out of this estimate translates into approximately 5.0% of the smolts being handled. Moreover, the estimated juvenile mortalities resulting from the research is expected to be less than 0.05% of the population. The following table displays the numbers of fish estimated to be handled and indirectly killed each year. The NWIFC requests this level of take for each of the five years (2002-2006) covered in the biological opinion.

Summary of Estimated Annual (January-December) Take of ESA-Listed Hood Canal Summer-run Chum Salmon.

Type of Take	Total Estimated Take	% Mortality of Fish Handled
Juvenile - Handling	**77,000**	
Juvenile - Lethal	**800**	
Total Annual Juvenile Take	**77,800**	**1.0%**
Adult - Handling	**0**	
Adult - Lethal	**0**	
Total Annual Adult Take	**0**	**0**

Based on prior experience, NOAA Fisheries expects a number of new projects or changes to existing projects will be requested that may affect ESA-listed Hood Canal summer-run chum salmon. Although it is difficult to anticipate the actual amount of research to be requested, NOAA Fisheries expects additional requests in future years that are similar to the research analyzed in the ERD. In the past these requests have been generated by such things as the availability of new funding, management changes (e.g., fishing regulations), and changes in environmental conditions (e.g., flooding). NOAA Fisheries and the Tribes anticipate these requests could increase existing take estimates by up to 20% of the requested fish handling and lethal take numbers and thus are included in this evaluation. Using the juvenile estimate of approximately 1.5 million fish and adding 20% additional take to the amount requested each year, approximately 6% (92,400/1,499,000) of the juvenile population may be subject to non-lethal, research-related take and less than 0.1% (960/1,499,000) of the juveniles may be killed. Hence, only a small fraction of the population are expected to be handled and even fewer killed under the Tribal Plan. Even if the take already authorized in the ESA Section 7 Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on Puget Sound chinook salmon and Hood Canal summer-run chum salmon is included in these figures (11 handled and 3 indirect mortality) a small fraction of the population is expected to be affected.

The research activities included in the Tribal Plan will not be concentrated in one stream or watershed, but rather will be distributed throughout the ESU's range, thereby further diminishing the impacts of any take to any sensitive or isolated populations. For these reasons, research-related take is not expected to reduce the ESU's populations, their reproductive capacity, or the distribution of populations in the affected ESU to the point of appreciably reducing their ability to survive and recover in the wild. To further limit impacts on ESA-listed fish, the Tribal Plan sets out specific requirements for the conduct of the research activities. Those requirements are incorporated herein and are comparable to those found in the ESA Section 7 Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on Puget Sound chinook salmon and Hood Canal summer-run chum salmon (NMFS, 2002).

Critical habitat for Hood Canal summer-run chum salmon was designated on February 16, 2000 (65 FR 7764) and vacated and remanded to NOAA Fisheries for new rulemaking pursuant to a court order on March 11, 2002. NOAA Fisheries will undertake a new critical habitat analysis and will re-issue critical habitat designations after that analysis is complete.

Cumulative effects are those effects defined in 50 CFR 402. Future Federal actions will be subject to the ESA section 7 consultation requirements, and are therefore not considered here. Non-Federal actions that require authorization under other sections of the ESA, and not included here, will be considered in separate section 7 consultations.

Conclusion

Based on the foregoing analysis, including the evaluation of the Tribal Plan in the ERD, NOAA Fisheries concludes that the proposed Federal Action is not likely to jeopardize the continued existence of the Hood Canal summer-run chum salmon ESU. Adequate measures will be used to minimize the effects of any take and the benefits resulting from the research will outweigh any negative impacts from the research.

In addition, NOAA Fisheries' July 2000 Tribal Plan Limit is designed to encourage activities that will conserve ESA-listed species. As discussed in the NOAA Fisheries ERD, the research submitted by the NWIFC is consistent with the Tribal Plan Limit and will provide sufficient conservation of and benefits for the ESA-listed species. The ESA take prohibitions will not apply to these activities.

Incidental Take Statement

Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and condition of this Incidental Take Statement. However, the take analyzed in this document is part of the intended purpose of the proposed action and is, therefore, not incidental take. Therefore, NOAA Fisheries does not expect the proposed action will incidentally take threatened or endangered species.

Conservation Recommendations

Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on ESA-listed species, to develop additional information, or to assist Federal agencies in complying with their obligations under section

7(a)(1) of the ESA. NOAA Fisheries believes the following conservation recommendation is consistent with these obligations, and therefore should be implemented:

> NOAA Fisheries shall monitor actual annual takes of ESA-listed fish species associated with scientific research activities, as provided in annual reports or by other means, and shall adjust annual authorized take levels if they are deemed to be excessive or if cumulative take levels are determined to operate to the disadvantage of the ESA-listed species.

Reinitiation of Consultation

Reinitiation and modification processes are set out in Part III of the ERD, and in the letter to the NWIFC. Consultation must be reinitiated if: The amount or extent of annual take specified in the Tribal Plan evaluation is exceeded or is expected to be exceeded; new information reveals effects of the actions that may affect the ESA-listed species in a way not previously considered; a specific action is modified in a way that causes an effect on the ESA-listed species that was not previously considered; or a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

Magnuson-Stevens Essential Fish Habitat

As part of the ERD, NOAA Fisheries assessed the impacts on habitat for these ESUs. The research activities will be low impact, limited size projects, with little if any habitat alteration. Those that do alter habitat generally involve only transitory effects such as installing a seasonal weir or screw trap (e.g., cabling to adjacent trees and rocks) or conducting foot surveys of instream or riparian habitats. Therefore, NOAA Fisheries concludes that the Tribal Plan will not directly or indirectly destroy or adversely modify the affected ESU's habitat.

References

References for this consultation are those found in the NOAA Fisheries ERD.